Rule CIC426: A large percent of list data reads had to be repeated

Finding: The CICS Shared Temporary Storage Queue Server statistics showed that a large percent of list data reads had to be repeated because the data was larger than the default data transfer size.

Impact: This finding has a LOW IMPACT, MEDIUM IMPACT, or HIGH IMPACT on the performance of the CICS region. The amount of impact depends on how many list data reads had to be repeated and the resulting overhead and delay.

Logic flow: This is a basic finding, based on an analysis of the data. The finding applies only with CICS/Transaction Server for OS/390 or for z/OS.

Discussion: The READQ TS command reads data from a temporary storage queue. The command optionally specifies INTO(data-area) to describe the data area into which the data is to be written. If the length of the data exceeds the value specified, the data is truncated to that value. A program error (LENGERR) occurs when the length of the stored data is greater than the value specified by the LENGTH option (this condition only applies to the INTO option).

The default action with this program error is to terminate the task abnormally. However, the application can take remedial action if the HANDLE CONDITION command had been issued before the READQ TS command had been issued.

If the request ended prematurely because the buffer was too small to hold the first entry to be read (for instance, the buffer is 4096 bytes but the data entry information is 65536 bytes), the application must determine the size of the data entry for the list entry that caused the failure, and re-issue the READQ TS command with larger buffer areas. This error handling and command re-issue creates unnecessary overhead and delays response.

Shared temporary storage queue server statistics for the coupling facility are available in MXG file CICXQ1. CPExpert uses data in CICXQ1 to calculate the percent of list data reads which had to be repeated because the data was larger than the default data transfer size, using the following algorithm:

$$Percent\ list\ data\ rereads = \frac{S1RRLCT}{S1RDLCT}$$

where   S1RRLCT   = Number of list data reads that had to be repeated

              S1RDLCT   = Number of list data reads

CPExpert produces Rule CIC426 when the percent of list data reads which had to be repeated because the data was larger than the default data transfer size is greater than the value specified by the **CFPCTLDR** guidance variable in USOURCE(CICGUIDE). The default value for the **CFPCTLDR** is 0 indicating that CPExpert should produce Rule CIC426 when any list data reads must be repeated because the data was larger than the default data transfer size.

Suggestion: If this finding is produced, you should consider the following alternatives:

- Review application use of shared temporary storage pools to determine whether the READQ TS commands can be issued with a correctly-sized data area for the INTO clause.

- Change the CFPCTLDR guidance variable in USOURCE(CICGUIDE) so Rule CIC426 is produced only when you wish to be aware of applications that cause a larger percent of list data reads must be repeated because the data was larger than the default data transfer size.

- You can specify **%LET CFPCTLDR = 100;** in USOURCE(CICGUIDE) to suppress this finding (the percent of list data reads which had to be repeated because the data was larger than the default data transfer size cannot be greater than 100), or you can "turn off" the rule using the process described in Section 3 of this User Manual.

Reference: CICS/TS for OS/390 Release 1.1
                CICS Application Programming Reference: Section 1.140 (READQ TS*)*
                CICS System Programming Reference: Section 1.1.5 (Exception conditions)

              CICS/TS for OS/390 Release 1.2
                CICS Application Programming Reference: Section 1.140 (READQ TS*)*
                CICS System Programming Reference: Section 1.1.5 (Exception conditions)

              CICS/TS for OS/390 Release 1.3
                CICS Application Programming Reference: Section 1.150 (READQ TS*)*
                CICS System Programming Reference: Section 1.5 (Exception conditions)

              CICS/TS for z/OS Release 2.1
                CICS Application Programming Reference: CICS API Commands (READQ TS*)*
                CICS System Programming Reference: Chapter 1 (Exception conditions)

CICS/TS for z/OS Release 2.2
   CICS Application Programming Reference: CICS API Commands (READQ TS*)
   CICS System Programming Reference: Chapter 1 (Exception conditions)

Rule CIC426.3